



Science Coach®



BECOME A Science Coach

Join a community of **paid** research teachers and rediscover the fun of teaching with a year-long, job-embedded professional development program.

Science Coach exists to make sure 6th - 12th grade teachers are trained, supported, resourced, and energized to inspire our future innovative work force through advanced original research.



QUALIFICATIONS:

3+ years of research or project based learning.



6th-12th grade public, private, or homeschool teacher in the U.S.



A desire to join a community of dedicated research teachers.

ADVANCED ORIGINAL RESEARCH

We take the traditional sports team approach and apply it to the STEM arena with an experienced Head Coach sharing and supporting their Teacher Coach team members. This proven professional development ecosystem excites and empowers 6th - 12th grade STEM teachers to coach students to complete original research projects for entry into competitions, with some continuing into our Innovation to Entrepreneurship Pathway.

ENROLLMENT PROCESS



TEACHER
APPLIES

1

2

SCIENCE COACH
ACCEPTS TEACHER
APPLICATION

FUNDING
SOURCED

3

4

TEACHER SIGNS
SCIENCE COACH
AGREEMENT

TEACHER
ATTENDS
SUMMER
TRAINING

5

6

TEACHER
IS WELCOMED AS
A SCIENCE COACH



Science Coach ECOSYSTEM



We've got your back. Guided by a Head Coach and an intentional team of teachers, you will be trained through a year-long, job-embedded PD mentorship program.

Teachers become a cohort team, tapping into a national network of accomplished colleagues and mentors. Drawing from their Head Coach's expertise, yearly summer conference, and monthly PD sessions, teachers grow in skills and confidence to take students to the next level.



You get paid for after school time.

Professional compensation for teachers. Teachers are treated as professionals, recognized and paid for personal time spent coaching STEM students. Teachers receive up to a \$3,000 annual stipend. Three graduate-level credits are available upon program completion.



The pathway is carved. Free access via Canvas to research methodology instructional resources.

Science Coach Teacher Curriculum is a full year of detailed lessons supporting advanced original research instruction. The companion, Science Coach Student Curriculum, provides self-paced, online instruction, helping students to work independently. Access to this rigorous research methodology saves teachers prep time while engaging students in hands-on project-based learning.



You're free to innovate. Flexible program implementation and access.

Implement Science Coach in existing classes, as a dedicated research class, or as an extracurricular activity.

It works in public, private, and homeschools across rural, urban and suburban areas. Learning becomes more equitable when teachers and students get expanded support when and where they need it.



Competitions? No problem. Proven step-by-step process to create competition-ready projects.

Clear objectives and timelines guide the research program to successful completion. Teachers coach students—from choosing their own topic to completing advanced original research—achieving and celebrating milestones along the way.



Elevate your students' learning environment. Unprecedented lab access, equipment & insurance.

Extend the standard science classroom by either borrowing equipment, working in our BSL-1 and BSL-2 labs, or using the Science Coach insurance to gain access to a local university/professional lab.



Your students' inventions will be protected. Intellectual Property (IP) protection.

Projects with IP potential join our Innovation to Entrepreneurship Pathway which helps students build a business or license their innovation.

TEACHER FUNDING

- Up to \$3,000 annual stipend
- \$3,750 in professional development and training
- \$800 in classroom research supplies and materials
(Purchasing/shipping handled by Science Coach)
- \$450 for student recruitment and retention efforts

NOTE: There is no cost to the teacher. Funding is provided either through the school/district via STEM initiative funds such as Perkins, Title I, Title V, or ESSA, grants, or private donations. Science Coach collaborates with teachers to identify and secure funding opportunities.

55+ National/
International Awards.

950+ Local and
Regional Awards.

Science Coach
WORKS

Nearly **\$5 million** in college
scholarships and cash prizes.

89% of students continue
into STEM careers.

FEATURES	BENEFITS
Year-long, Job-Embedded Professional Development	• Science Coach provides professional development based on teacher requests. • Teachers gain direct access to an experienced Head Coach mentor. • Teachers become a cohort team tapping into a national network of accomplished colleagues and mentors who help them prepare for, and enter, competitions. • Drawing from their Head Coach's expertise, yearly summer conference, and monthly PD sessions, teachers grow in skills and confidence to take students to the next level.
Science Coach Teacher Curriculum Includes 14 research methodology modules, from Introduction to Research to Presenting Results.	• Step-by-step downloadable/modifiable lesson plans, rubrics, and classroom activities. • Uses the 5 E model: engage, explore, explain, elaborate, and evaluate. • Clear objectives and timelines guide student innovators to successful completion. • Text is fully downloadable and modifiable allowing teachers to easily customize lessons for individualized needs. • Saves teachers prep time, increases student research skills and teaches industry-level research practices. • Teachers are required to be compensated either through extra duty/extra pay or up to a \$3000 annual stipend.
Science Coach Student Curriculum Online Innovation Access	• Science Coach pays for the monthly student access to this program, which includes teacher access/oversight. • Teaching remote students how to do advanced original independent research with career-specific information for direct inclusion in the student research process. • Great for the student who wants to start their research project over the summer.
Insurance Coverage For Local Lab Usage	• Our certificate of insurance covering students and teachers allows them to gain access to professional labs. • Students and teachers have additional insurance coverage for transportation, lab equipment, breakage, and professional liability.
Two BSL-1 and BSL-2 Labs In the St. Louis Area	• Accessible by teacher and student 24x7x365, Science Coach participants have a dedicated lab table with \$50m of shared equipment access at the BioSTL lab. • Additional lab access at 39° North Helix Lab, Danforth Plant Science Center, and St. Louis Community College
Science Equipment Loan Program and Giveaways	• FREE equipment loaner program; everything from scales to incubators to centrifuges. • Science Coach sources equipment and supplies to freely give to teachers.
Intellectual Property (IP) Review Process	• Research projects with IP potential join our Innovation to Entrepreneurship Pathway where experienced scientific guardian ad litem lead, educate, and protect the student's best interests.

Since 2007, the Science Coach non-profit has been engaging 6th-12th grade students to experience completing a scientifically accurate research project that solves a problem important to them. We work through schools to intentionally upgrade the skills of research teachers, providing extensive professional development and a comprehensive support ecosystem that results in 89% of students choosing STEM careers.

Science Coach Curriculum Modules

Delivered via Canvas by Instructure

Module 0: Introduction to Innovation

- Creativity and Innovation
- Working within a Team
- Characteristics of Innovators
- Design Thinking

Module 1: Introduction To Research

- Why Conduct a Research Project
- Exploring Science Competitions
- Scientific Research Changes the World
- Sharing Research Findings
- Where Can Research Be Conducted?

Module 2: Developing A Research Question

- Creating a Logbook
- What Makes a Good Research Question
- Research Questions Around School, in Nature, and Everywhere
- Create Your Research Question
- Finding a Mentor

Module 3: Conducting A Literature Review

- What is Scientific Literature
- What is a Literature Review
- Literature Review Databases
- Potential Problems with Literature Reviews
- Conducting Your Literature Review
- Writing Your Hypothesis

Module 4: Research Ethics & Integrity

- Intro To Ethics and Integrity In Research
- Ethical Issues With Living Beings
- Ethical Issues With Handling Information
- Governing Bodies of Ethics
- Ethical Scenarios

Module 5: Study Design I

- Types of Variables
- Writing a Procedure
- Quantitative and Qualitative Studies
- Mixed Methods Study Designs
- Designing Quantitative and Qualitative Studies
- Study Design Implementation
- Student Presentations

Module 6: Study Design II

- Types of Qualitative and Quantitative Studies
- Observational and Survey Study Designs
- Surveys and Focus Groups
- Applying Observational, Survey and Focus Group Study Designs
- Correlation and Causation
- Correlation Study Design
- Quasi-Experimental – Experimental Study Designs
- Applying Experimental Study Designs
- Designing Your Experiment

Module 7: Conducting Your Experiment

- Bias and Sample Sizes
- Designing Your Data Collection
- Materials Lists and Laboratory Safety
- Aseptic Technique and Sterile Workspaces
- Refining Your Procedure
- Carrying Out Your Procedure

Module 8: Data Analysis Using Descriptive Statistics

- Descriptive Statistics
- Applying Real World Data
- Analyzing Data Using Google Sheets
- Analyzing Real World Data Using Google Sheets

Module 9: Data Analysis Using Statistical Analysis

- Introduction to Statistical Analysis
- p Values
- Significance Testing, T-Tests
- Chi Square
- Linear Regression
- Analysis of Variance Test (Anova)
- Applying the Appropriate Tests
- What Bad Statistics Can Do

Module 10: Results & Conclusions

- Constructing Graphs
- Applying Data Organizational Skills
- Interpreting Graphs
- Developing A Conclusion And Discussion
- Developing Your Conclusion And Discussion

Module 11: Writing a Scientific Paper

- Parts of a Scientific Paper
- Writing a Scientific Paper
- Literature Review, Procedures, and Materials
- Results, Discussion, and Conclusion
- References and Apa Format
- Abstracts

Module 12: Presenting Results

- Creating Your Presentation or Demonstration
- Creating Your Speech
- Using Props and Visual Aids
- Speaking Techniques
- Practicing Your Speech
- Presenting Your Project Virtually

Module 13: Reflection

- Successes and Failures
- Future Goals
- Making a Plan to Continue this Project for Next Year's Research

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